

## Scientific Note

### ***SESIA SPARTANI* IN BRITISH COLUMBIA: A NEW CLEARWING MOTH RECORD FOR CANADA WITH NOTES ON ITS RESPONSE TO PHEROMONES (LEPIDOPTERA: SESIIDAE)**

The relatively large and attractive sesiid, *Sesia spartani* Eichlin and Taft, was originally described on the basis of male specimens collected in synthetic sex pheromone baited traps (Eichlin, T. D. & W. H. Taft. 1988. J. Lepid. Soc., 42: 231–235). Until now this species was known only from Clinton, Lake, and Shiawassee Counties on the Lower Peninsula of Michigan.

Two of us (BSL and LAR) recently completed a study of the distribution and abundance of “pitch moths” feeding in *Pinus contorta* Douglas ex Loudon var. *latifolia* Engelmann (lodgepole pine) seed orchards and provenance trials at the Prince George Tree Improvement Station (PGTIS) located 10 km south of Prince George, British Columbia (Rocchini, L. A. 1997. M.Sc. Thesis, University of Northern British Columbia, Prince George). This site encompasses 2170 ha of various silvicultural trials and conifer clone banks (in addition to the orchards and provenance trials) and is surrounded by mixed stands dominated by trembling aspen (*Populus tremuloides* Michaux), lodgepole pine and interior spruce (*Picea glauca* (Moench) Voss x *engelmannii* Parry ex Engelmann). Wu and Ying (Wu, H. X. & C. C. Ying. 1997. Forest Science, 43: 571–581) mistakenly attributed observed lodgepole pine stem damage at PGTIS to the sequoia pitch moth, *Synanthedon sequoiae* (Henry Edwards). However, during this study two other “pitch moths,” a related sesiid (*Synanthedon novaroensis* (Henry Edwards)) and a pyralid (*Dioryctria cambiicola* (Dyar)), were subsequently determined to be responsible for the damage (Rocchini 1997). Populations of *S. novaroensis*, *S. sequoiae*, and *D. cambiicola* were monitored over a three year period (1995–1997) using emergence traps (for *D. cambiicola*) and commercially available synthetic sex attractants (for *Synanthedon* spp.).

In a range of experiments (full details and analyses in Rocchini 1997), traps were baited with 200 µg of (Z,Z)-3,13-octadecadien-1-ol (Phero Tech Inc., Delta, British Columbia), a compound known to be effective in trapping a number of sesiid species including *S. sequoiae*. Subsequently, once it was realized that *S. novaroensis* was the primary cause of stem damage at PGTIS, experiments using the corresponding acetate, (Z,Z)-3,13-octadecadienyl acetate (Phero Tech Inc.), a known attractant of *S. novaroensis*, were added to allow monitoring of this species. Trapped sesiids were identified to species by RGB and TDE. No specimens of *S. sequoiae* were caught, but among non-target sesiids captured in the alcohol baited traps of great interest to us were 28 specimens (1995 = 16, 1996 = 9, 1997 = 3) of *S. spartani*. These are the first records of this species from outside of its originally described range.

Trap catches suggest that the flight of male *S. spartani* lasts for about one month in the summer in the Prince George area. Moths were captured at PGTIS from mid-June to late July in 1995 and from late July to late August in 1996

(traps placed from 19 June to 1 Sept 1995 and 31 May to 21 Sept 1996). The captured moths were presumably attracted from the surrounding natural stands which range from about 100 m to less than 20 m from individual PGTIS orchards.

Based on typical larval damage to trees in the type locality, Eichlin and Taft (1988) suggested trembling aspen (Salicaceae) as a likely host species. The specimens of *S. spartani* found in British Columbia represent a considerable range extension (spanning half the continent and crossing the western continental divide), but this finding is perhaps not surprising given the wide range of its probable host. Trembling aspen occurs continuously through virtually all forested regions of Canada and the northern United States (Lauriot, J. 1989. Identification guide to the trees of Canada.) and dominates the forest stands around the PGTIS trapping sites. Other Salicaceae in the area include *P. trichocarpa* Torrey & Gray (black cottonwood) and various *Salix* spp. (willows).

The range extension here reported suggests that this species may be common and widespread in northern North America. It is easily confused with *Sesia tibialis* (Harris), and specimens of *S. spartani* will key to this in the standard sesiid monograph (Eichlin, T. D. & W. D. Duckworth. 1988. The moths of America north of Mexico, fascicle 5.1) published just prior to the description of *S. spartani*. However, the two species are readily separated on the basis of male genitalic characters (the female remains unknown) and antennal differences (see Eichlin and Taft 1988). Because Michigan populations of *S. spartani* and *S. tibialis* apparently are allopatric and no specimens of *S. tibialis* were captured at the PGTIS in this study, it is likely that *S. tibialis* does not occur in the vicinity of PGTIS. *Sesia tibialis* is a well known, economically important sesiid causing damage to species of *Populus* and other Salicaceae (see, for example, Baker, W. L. 1972. Eastern forest insects (as *Aegeria tibialis* Harris); Furniss, R. L. & V. M. Carolin. 1980. Western forest insects (as *Aegeria tibialis pacifica* (Henry Edwards)); Ives, W. G. H. & H. R. Wong. 1988. Tree and shrub insects of the prairie provinces; and Johnson, W. T. & H. H. Lyon. 1991. Insects that feed on trees and shrubs, 2nd ed.). It is common practice for field workers to identify well known, economically important insects on the basis of habitat and/or damage symptoms (which may lead to errors in determining the actual pest), as opposed to examining actual specimens using truly diagnostic (often internal morphological) characters. Mistaken identifications compromise research conclusions and may render pest management efforts ineffectual (different species normally respond to different sex pheromones and/or have distinctly different life cycles with target life stages present at separate times). In light of these new findings, it would be interesting to dissect and critically examine putative specimens of *S. tibialis* from across its range to determine if *S. spartani* is actually a widespread (and economically important) species hiding in the shadow of its better known sibling.

*Acknowledgment.*—This work was supported by a grant from Forest Renewal British Columbia to RGB. We thank A. M. MacIsaac, K. Welgan, and S. Hoover for technical assistance and C. Fleetham and R. Wagner for access to the PGTIS site and facilities and two anonymous reviewers for their excellent comments. Voucher specimens of *S. spartani* from this study have been deposited at the Royal British Columbia Museum (Victoria, British Columbia); the Pacific Forestry Centre (Victoria, British Columbia); the California State Collection of Ar-

thropods, Plant Pest Diagnostics Center (Sacramento, California); and the National Museum of Natural History, Smithsonian Institution (Washington D.C.).

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*Received 27 Sep 1999; Accepted 23 Dec 1999.*